Pop Cultures 1a: Mushroom 11

Morel Dilemma Episode 5 Script.

Izzie: Welcome to Morel Dilemma: an exploration of why some mushrooms are so highly sought, some are so heavily cultivated, and some are so very dangerous. Today I was going to talk about what it means for mushrooms to grow in symbiosis with trees - how that works in terms of biology, what the fungus and the tree both get out of the relationship, and how that relationship might have come about. But it turns out that Radiolab, the podcast rock stars, already did an episode on exactly this topic at the end of July! The episode is called "From Tree to Shining Tree," and Jad and Robert talked to a ton of experts to flesh the story out.

I gave the episode a listen, and it's full of really cool info - all of the things I had been planning to cover, and then some. I learned some things that I didn't find in my own research, too! So rather than cover that topic again in less depth, I'm going to recommend that you go listen to their piece. And then also listen to their other episodes, because they're awesome. They aren't paying me to say that, it's just a fact!

Anyway, because Radiolab took care of the science this week, I get to talk about something else. Part of what's really cool about looking at fungi as a pop science topic is thinking about the *pop* - that is, the fact that mushrooms and fungi are so pervasive in popular culture. In order to explore that idea, I've decided to immerse myself in any and all pop culture media that uses fungi, and talk to other consumers as well as creators to get some idea of why mushrooms are just… so… fascinating.

So let me start again.

[Music begins]

Izzie: Welcome to Pop Cultures, an exploration of how mushrooms and fungi capture our imaginations. This first episode will be looking at a video game called Mushroom 11, in which the player navigates puzzles as a fungus in a blasted and abandoned landscape.

The game is a platformer, which means that the character on-screen can move in only two dimensions and needs to move to a specific edge of the screen to proceed.

If you've ever seen or played a Mario Brothers game, you're familiar with the platform format: the hero Mario needs to move to the right, jumping onto platforms and dropping down into pipes, to move on in the game's story. Whenever Mario moves to the right, the world scrolls to the left side of the screen; Mario remains in the middle of the screen as he moves through challenges. This way, Mario levels can be many times again as long as a typical screen.

Many side-scrolling platform games, including Mario, present the player with challenges related to timing: a player needs to jump at a particular time, run at a particular speed, stop short at a particular moment, in order to complete the level without killing the character. In almost all video games, killing the character is not the end of the game, and players can try the lethal challenge again from a previous, specified place called a savepoint.

Mushroom 11 is a puzzle platformer, which means that while the player needs to move across multiple screens to make narrative progress, the major challenge is in puzzle solving in addition to, or instead of, timing. The player must interact more dynamically with the world of the game to solve the puzzles, which often involve moving objects to specific locations, manipulating switches in a particular way, or building structures with limited resources.

Once you define Mushroom 11 as a puzzle platformer, it gets harder to compare with other games. First off, the protagonist isn't a person or animal. Most games let the player guide a human or animal through challenges, and the character can walk, run, jump, duck, and pick up and move objects. By contrast, the main character in Mushroom 11 may not even be a character in the classic sense. It's a verdant green gob, pulsing with life but with no definite form. It's not even clearly a mushroom.

Julia: We've had people call it different names. Like one person was set on calling it "Mister Blobby" and I was like, "Okay, it's Mister Blobby".

Izzie: That's Julia Keren-Detar, who developed Mushroom 11 with her husband Itay. She says that the creature, which doesn't have an official name, is more like a mass of mycelia than a mushroom. The game's title actually came after the creature had already been designed.

Julia: We didn't think about anything until we made this weird organism and we were trying to figure out what to call it. We were like, "Well, it looks sort of like a fungus." So instead of calling it 'Fungus 11', we thought "Oh, like mushrooms!" So, 'Mushroom 11'.

Izzie: The game's character was born out of a Game Jam, a sort of game developer convention where people have a certain amount of time to create a game or game mechanic based on a certain theme. The theme of this particular Game Jam was "ouroboros", a snakelike being that eats its own tail, an ancient symbol of renewal and the balance of life and death. Itay and Julia used this inspiration to create an amorphous glob, which I suppose I'll call "Mister Blobby", that moves in a very interesting way.

Imagine playing a level of Mario on a computer. When you want Mario to move to the right, you can press the right arrow key. If you want him to jump, you can press the up arrow. Your commands are directly controlling the character.

In Mushroom 11, the player wields an eraser that selectively *destroys* Mister Blobby. The glob moves across the screen by growing on the opposite end it's being erased

from. So if the player erases the right side of Mister Blobby, its left side grows to compensate. The glob always tries to maintain a certain volume, but it cannot exert any force. So if it's run against a thin wooden door on the left and the player erases on the right, the door won't break.

Julia: The whole game is basically centered on you having very limited control. You can't jump, you can't push, you can't act like a normal character in a game. You have to act in this, almost negative space, sculpting and encouraging it, and sort of molding in this very indirect way.

Izzie: If Mister Blobby gets stuck in a very small hole and most of him gets crushed by platforms of spikes that descend from the ceiling then it will become very small. (Yes, platforms of spikes do drop on Mister Blobby kind of frequently. But as soon as the spikes lift off again and Mister Blobby has space to grow, Mister Blobby will.

Julia says that early on in game development, she and Itay considered allowing Mister Blobby to change volume - for example, staying small when crushed into that hole, but getting larger after rolling over something yummy that Mister Blobby could eat.

Julia: At first we, of course, were like, "Well, what if you grow bigger and what if you grow smaller?" It's just not that fun, because if you're bigger then you have more stuff to manage; if you're smaller you have less stuff, and the puzzles drastically change in terms of difficulty. And it was just too hard to maintain. So we knew, from a game design point of view, we knew we wanted it to be the same size, always.

Izzie: The consistent volume also helps from a storytelling perspective, making the character feel more tangible and real. And once Julia and Itay determined that the blob would always try to stay a certain size, a lot of things fell into place. Especially in relating Mister Blobby to actual fungi.

Julia: We started researching mushrooms and all this amazing stuff just came out, that was just so – that fit the landscape so perfectly.

Izzie: The landscape Julia is referring to here is a post-apocalyptic one. Julia says she's really big on apocalypses, and that helps her fit right into the game design community; Wikipedia's list of post-apocalyptic video games is 280 titles long, and some of those titles are series with multiple games. Julia and Itay wanted their fungus to occupy a post-apocalyptic world, but not the kind you'll find in most video games.

Julia: Apocalypse is this big trope in video games, but there's always people around in apocalypses, which is very weird to us. Like, if it's an apocalypse there shouldn't be any people. You know, maybe we should bring that up to people: what will happen after we're all gone?

Izzie: So in Mushroom 11, the player helps Mister Blobby navigate a more or less blasted landscape. From a farm with a rusted pesticide trailer to an eerie, still-operating factory, the user needs to guide Mister Blobby by - gently - destroying it.

Progress by destruction leads to another interesting mechanic. Like the eraser, it's something new in video games - I've certainly never heard of anything like this. Basically, Mister Blobby can be broken into pieces, and the pieces are still alive and independently controlled.

Julia: Originally we wanted to make puzzles where you had to split yourself into three or four pieces in order to solve the puzzles, but that became really tedious.

Izzie: It became too much because each piece isn't just alive - it's still growing whenever the player uses the eraser. If I drop a single tiny dot of Mister Blobby through a tiny hole and then begin erasing the larger mass that didn't fit, the tiny dot that's already through will grow with that erased mass. If I shave the bit that's gone through the hole, the original mass will grow again. If this isn't making sense, I've put a game trailer on moreldilemma.org where you can watch a sample of gameplay. Anyway, this mechanic means that you can split your mass and move the two pieces of Mister Blobby independently to solve a whole new class of puzzles than you could solve as just one organism. It also feels a lot like fission, a method of asexual reproduction in which an adult of a species splits itself into two pieces that can each grow into new adults. A lot of yeast fungi do this, for example.

I asked Julia about some of the other parallels that Mister Blobby has to real fungi. Because Mister Blobby's traits were what inspired Julia and Itay to look into mushrooms, many parallels are retroactive - coincidence rather than planning. Here's an example: When Mister Blobby encounters a food object, like a small mushroom or a lightning bug, it can absorb the food and the green blob temporarily takes on the color of the food item. I asked Julia if this was meant as an allusion to symbiosis, where a large organism can absorb a small one but let it keep working, creating an internal partnership.

Julia: Yeah, that's great! Yeah, I didn't know that, but you put that in the game. That's amazing. I mean we really didn't think that much into it, but we're also kind of aware of, you know, mushrooms and mycelium in particular being used as this network [of] communication between plants and this network [of] communication between itself.

Izzie: Julia thinks that could be used to explain how Mister Blobby can have multiple cooperating parts. My friend Eric, who originally introduced me to Mushroom 11, had another explanation.

Eric: The way you wield the eraser almost gives the fungus intentionality, and obviously it does have some intentionality because it is controlled by you. So each of these viable parts has some kind of latent telepathic link to the others. Through that communication, they can collect the information and send it back to the whole, so that it always keeps getting passed on.

Izzie: I relayed Eric's theory to Julia, who said that while she and Itay didn't specifically dream up telepathic fungal mycelia, she does feel that when the player helps a piece of Mister

Blobby collect food, it might be taking the information from that piece of food and conveying it to the rest of the body.

Julia: We were definitely thinking about something similar. Definitely, like, you know, collecting genetic information and distributing it in some way. The process that we had for this game was thinking about design first, and then putting story up, and then being vague enough for people – like, you think "Oh, it has this telepathic communication system."

Izzie: And it turns out that making up your own theories is a lot of the fun - at least, it was for me and Eric. He and I spent a couple of hours talking about lots of crazy theories we have for the glob and the world and what it all means. As it happens, though, Julia and Itay had their own cool agendas in creating the game. A lot of them come back to that idea of human-free post-apocalyptic landscapes.

Julia: People would get into the story; we sort of want them to think about, like, "Hey, we're not the dominant, most important creature on the earth." You know, things are going to take over, and we're not going to be on the planet forever, so what will that look like?

Izzie: While they were researching and developing the game, Julia and Itay came across a TED talk that seemed to give hope for a world without humanity. In a TED talk, an expert boils their work or research down into a 10-minute presentation for a wide audience. The talk that most influenced Mushroom 11 is a discussion from famous mycologist Paul Stamets about non-food uses of fungi. That talk focuses on some of the wastes that fungi can help break down, which are some of the same wastes that are threatening to choke many modern ecosystems.

Julia: You know, the idea of mushrooms being able to break down plastics and oils is just this saving grace, of how we can get out of our mess.

Izzie: This is called bioremediation - the process of using an organism's natural abilities to break down toxic substances that would otherwise hang around as poisons.

Julia: Yeah, like – having a toxic substance, being able to break that down, and being able to make substances that other creatures can then consume and grow out of.

Izzie: This idea comes through very strongly in the visuals of the game. As Mister Blobby proceeds, it doesn't just absorb cute little blue lightning bugs and tiny pink fairy mushrooms. It also absorbs some… less savory organisms, that look like they woke up on the wrong side of the toxic waste. In fact, to finish each of the seven levels of Mushroom 11, the player must help Mister Blobby defeat a very big and often crafty creature that definitely spawned from the brains of two people who love apocalypse fiction. And yet a part of each of these creatures can be absorbed by Mister Blobby - sometimes several parts. At first contact, the absorbed material dyes Mister Blobby

an unsettling red or brown… but after a few seconds, that color fades into the nice verdant green Mister Blobby is most of the time.

Julia: We did want to have this idea that you are basically absorbing creatures in this space, and you are basically taking their biodegradable material and processing it. It's both like being able to break down and eat for your metabolism, but it's also this larger context of cleaning up after whatever happened to this world in order to make it so that other life can be sustained.

Izzie: This idea, like so much of the inspiration and story behind Mushroom 11, is there if you care to look for it, but is not overtly stated. The narrative of Mushroom 11 is actually literally background noise - as the player guides Mister Blobby through the factories, homes and fields of the world, it's easy to imagine a player just enjoying the puzzles and paying no attention to the apocalypse, or the lack of humans, at all. Julia says that's fine.

Julia: I sort of, definitely was trying to think about like, how can we bring those different types of ideas, that are perhaps not so human-centric, to a video game. And sort of just ask people, in a very passive way – and I don't know, some players are just going to play the game and say "Oh, I had fun and that was it."

Izzie: I'm not one of those people, though, and I tried desperately to figure out what the cataclysm was that had led to humanity's downfall before the game. Before I finished the game, I told Eric my frustration at not knowing the narrative yet. In many of the game reviews I'd read, gamers said that in the later chapters, 5 through 7, the player learns about the world-ending apocalypse. I was in Chapter 5 and hadn't come across anything really expository.

Eric: You really do need to finish the game to find out why. So finish it. But it's not so much that the exposition happens at the end; you won't get any text, you won't get any voiceovers. You look at the writing on the walls of the cave and start to piece together what you were originally made for, what you might end up becoming. And then, using the information that you get at the end of the game, start to realize your importance and your place in the world.

Izzie: So I had high narrative hopes entering the last few chapters. And it's true, the ending of the game was super satisfying - I don't want to spoil the game, but I'll say it is *extremely* satisfying. But the writing on the walls doesn't really tell too much of a story. Certainly not one that strings together what happened to the humans.

When my reverie of the game's end released me, I called Eric to be upset at him.

Izzie, on a phone recording: You implied to me that, in the epilogue the writing on the walls would – you said, I think, literally – tell me what happened. I am angry with you.

Eric: No! I did not say that it would tell you what happened. I said that it would connect the parts. And I do think that your answer is the right answer. That's how it was designed.

Izzie: Julia backed this idea up.

Julia: I as game maker am not the one that's like "Yes, this is how it is." I mean, if you think that, it's definitely legitimate. But if you don't think that, that's fine too. A lot of people didn't like that it was so vague, but I feel like that's important, because I don't want to be the dictator of the story.

Izzie: I think that's something that really makes Mushroom 11 stand out as a game - there is no set story, which makes it somehow more involving than many games that do have coherent, defined narratives.

Julia: Like the gaps in the comic panes, right? The viewers put a lot more in between the spaces of a comic book than the comic book artist could ever do.

Izzie: Eric, who has a background in game design, was excited about this method of storytelling.

Eric: You know, normally, saying "Oh it's up to the reader to decide!" or "It's up to the viewer to decide! We left it intentionally vague!" Some people might see that as a copout in certain scenarios. But it seems a little bit more in keeping with the way you're constructing a narrative in a game.

Izzie: Me, I'm conflicted. I agree that it's really cool to leave the story up to the viewer; I really enjoyed tossing theories back and forth with Eric. But at the same time, I feel frustrated at knowing how a story ends, but not how it begins. Maybe it's because for most of my life, I've been consuming stories that are finite and very intentional. When I'm presented with a game like Mushroom 11, it feels like I'm supposed to be solving a mystery - someone left these puzzles behind for me to help Mister Blobby solve, for a reason, because Mister Blobby is here for a reason, and that reason is knowable. When I finished the game, I was expecting to get some kind of closure in knowing how all the humans died. Essentially, as I told Julia,

Izzie, on a phone recording: I was like, "Oh man, this is all culminating in a big reveal and there's gonna be, like, a big statue to the creator of Mushroom 11 in the epilogue. [Julia laughs] And there wasn't!

Julia: There wasn't, yeah. No, I hear you. I don't know. I'm sort of okay with that frustration. I think that when we were coming up with the game, we had this elaborate story we wanted to tell, and then it was just like, no, this doesn't – I mean, let's put the details in, but it's just more important to not be prescriptive in terms of the story.

Izzie: Basically, all that conversation did was instill me with a burning need to know Julia and Itay's elaborate story. But oh well. Julia says that ultimately, the nature of the cataclysm isn't even important.

Julia: The idea that was important is, humanity isn't there. Whatever happened to it, it isn't there.

Izzie: And *that* brings up even more interesting questions.

In the interest of not spoiling the plot of the game, that's where this episode ends. Don't worry, though - there will be another episode with more details about the plot, some more about the puzzles, and a lot on the ethics of a fungus in a world without humans. Before that episode, I highly recommend that you try playing Mushroom 11. If you like platformers or puzzle games, especially interesting twists on the genre like Braid or Portal, you will *love* this game. Also, it's not very expensive and doesn't require a special gaming system - you play it on your computer. Win-win!

You can get the game, and some more information, on Mushroom11.com. I'll post a link on the blog, along with some cool screenshots and clips from the game so you can get a look at the Mister Blobby you've heard so much about. You can also see the more traditionally shaped mushrooms that the game features in its beautiful backgrounds. Also, I must warn you that, while addictive, it's not easy, and if your game style is anything like mine you'll want to stay away from children and open windows while you play.

Izzie, on a phone recording: Within an hour, my husband was saying "Maybe this isn't a good game for you to play," because I was just shrieking obscenities.

Julia: I was too!

Izzie, on a phone recording: But when he said that, I looked at him blankly; I was like, "Why wouldn't I play this? It's so much fun!

Julia: Yeah.

Izzie: But getting through the puzzles always feels so amazing, and the visuals and music calm you down like nothing else. It's really a beautiful gaming experience, expletives and all.

[Music begins]

Morel Dilemma is written and produced by me, Izzie Gall. Our theme music was written and performed by John Bradley. Special thanks this week to Julia Keren-Detar, co-developer of Mushroom 11, for the interview, and thanks to my good friend Eric Glickman-Tondreau for introducing me to the game and talking with me about it.

Hey, here's something new: If you would like to make a donation to support the podcast, you can do that now! Morel Dilemma is on Patreon, where you can receive cool rewards for donating, and donations start at just $1 a month. That would help me a lot!

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intermission, or info about mushrooms in pop culture you'd like me to talk about. That's 347-416-6735. You can find other ways to contribute, and other Morel Dilemma content, at moreldilemma.org.

Thanks for listening!

[Music ends]

Resources

Glickman-Tondreau, Eric. Personal interview. 19 Jul. 2016.
Glickman-Tondreau, Eric. Personal interview. 24 Aug. 2016.
Keren-Detar, Julia. Personal interview. 23 Jul. 2016.
Keren, Itay and Keren-Detar, Julia. *Mushroom 11.* Untame Games, 2015. Computer software.